



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,519	12/13/2000	Yukiko Morioka	WAM-03301	8886

26339 7590 04/08/2004

PATENT GROUP  
CHOATE, HALL & STEWART  
EXCHANGE PLACE, 53 STATE STREET  
BOSTON, MA 02109

EXAMINER

GARRETT, DAWN L

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p style="text-align: center;"><b>Office Action Summary</b></p>	<b>Application No.</b> 09/736,519	<b>Applicant(s)</b> MORIOKA ET AL.	
	<b>Examiner</b> Dawn Garrett	<b>Art Unit</b> 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1-7-2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-18,29-34,47-52 and 63-125 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18,29-34,47-52,63-68,81-86 and 97-102 is/are allowed.
- 6) ☒ Claim(s) 69-74,87-90,103-109 and 116-119 is/are rejected.
- 7) ☒ Claim(s) 75-80,91-96,110-115 and 120-125 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)<br>6) <input type="checkbox"/> Other: _____. |
|--|--|

**DETAILED ACTION**

***Response to Amendment***

1. This Office action is in response to the amendment dated January 7, 2004. Claims 1-12, 19-28, 35-46, and 53-62 are cancelled. Claims 13-18, 69-80, 87-101, and 103.

New claims 104-125 have been added.

2. The rejection of claims 1-12, 19-28, 35-46, and 53-62 under 35 USC 102(e) as being anticipated by Bulovic (US 6,312,836) set forth in the last Office action is withdrawn in light of the amendment.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 69-74, 87-90, 103-109 and 116-119 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamada et al. (US 6,555,253). Hamada et al. exemplifies a device comprising an ITO anode, a cathode and a mixed light emitting layer in between the electrodes comprising perylene and GaMq<sub>2</sub>Cl (see all of Example 11, especially top of col. 20). The perylene and GaMq<sub>2</sub>Cl form an exciplex, so that the half width of the luminescent spectrum is increased (per instant claims 70 and 105) per the spectrum different from any one of fluorescent peak positions of the at least two compounds

Art Unit: 1774

included in the light-emitting zone. The device of Example 11 further discloses an electron transporting layer between the cathode and the light emitting layer comprising BeBq<sub>2</sub> (per instant claims 103 and 104). The material BeBq<sub>2</sub> is deemed to inherently possess an electron injecting function per the electron-injecting zone requirement of claim 104. [See the discussion of BeBq and other electron transporting materials as electron transporting and injecting material in Miyashita et al. US 2003/0054186, paragraph 57.] The hole transporting compound MTDATA is furthermore deemed to possess hole injecting properties per the requirement of a hole injecting zone (per instant claim 69). [See the discussion of MTDATA in Hosokawa (US 5,536,949) at col. 57, lines 43-56.] The perylene and BeBq<sub>2</sub> compounds are deemed to be electroluminescent materials and perylene is also deemed to be a fluorescent material per instant claims 71-74 and 106-109. Perylene is an aromatic hydrocarbon per instant claims 87-90 and 116-119.

#### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

#### ***Allowable Subject Matter***

6. Claims 13-18, 29-34, 47-52, 63-68, 81-86, and 97-102 are allowed. Claims 75-80, 91-96, 110-115, and 120-125 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art is considered to be Hamada et al. (US 6,555,253), which teaches a mixed light emitting region with a spectrum peak different from the individual peaks of the compounds

Art Unit: 1774


present in the layer. Hamada et al. fails to teach a diamine compound according to formula (1) in the mixed light emitting layer as expressly required by these claims.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is 571-272-1523. The examiner can normally be reached Monday through Friday during normal business hours. Please allow the examiner twenty-four hours to return your call.

If reasonable attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached at 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DAWN GARRETT  
EXAMINER  
ART UNIT 1774

D.G.  
March 30, 2004